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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,285	03/16/2004	Vijayalakshmi R. Raveendran	030065	3631

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QUALCOMM INCORPORATED
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EXAMINER

RASHID, DAVID

ART UNIT	PAPER NUMBER
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2624

NOTIFICATION DATE	DELIVERY MODE
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03/20/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/802,285	Applicant(s) RAVEENDRAN ET AL.	
	Examiner DAVID P. RASHID	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All of the examiner's suggestions presented herein below have been assumed for examination purposes, unless otherwise noted.

Prosecution Reopened

2. In view of the Pre-Brief Conference request filed on January 25, 2008 PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

3. Applicant's remarks directed to 35 U.S.C. 103(c) in the response received on 1/16/08 are acknowledged. Specifically,

“Applicant also notes that the Thyagarajan reference and the present application were, at the time the invention covered by the present application was made, owned by the same person or subject to an obligation of assignment to the same person, that person being Qualcomm, Inc. Both the Thyagarajan reference and the present application have been so assigned and the present application was subject to such an assignment at the time of the invention. Thus, according to 35 U.S.C. § 103(c) (and MPEP 706.02(1)(2)), the Thyagarajan reference can not be used to preclude the patentability of the present application and is an improper reference. Withdrawal of the rejection of the remaining claims is respectfully requested.”

The Thyagarajan reference is not longer relied upon.

Applicant's pre-appeal conference request is being treated as a request for reconsideration, and prosecution is reopened in response thereto.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Section IV.C, reads as follows:

While abstract ideas, natural phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, natural phenomena, and laws of nature to perform a real-world function may well be. In evaluating whether a claim meets the requirements of section 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, natural phenomenon, or law of nature, rather than for the abstract idea, natural phenomenon, or law of nature itself.

For claims including such excluded subject matter to be eligible, the claim must be for a practical application of the abstract idea, law of nature, or natural phenomenon. Diehr, 450 U.S. at 187, 209 USPQ at 8 ("application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection."); Benson, 409 U.S. at 71, 175 USPQ at 676 (rejecting formula claim because it "has no substantial practical application").

To satisfy section 101 requirements, the claim must be for a practical application of the Sec. 101 judicial exception, which can be identified in various ways:

The claimed invention "transforms" an article or physical object to a different state or thing.

The claimed invention otherwise produces a useful, concrete and tangible result, based on the factors discussed below.

6. Claims 1-12 and 34-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 1-42 recites the mere manipulation of data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application. A practical application exists if the result of the claimed invention is “useful, concrete and tangible” (with the emphasis on “result”)(Guidelines, section IV.C.2.b). A “useful” result is one that satisfies the utility requirement of section 101, a “concrete” result is one that is “repeatable” or “predictable”, and a “tangible” result is one that is “real”, or “real-world”, as opposed to “abstract” (Guidelines, section IV.C.2.b)). Claims 1-42 merely manipulates data without ever producing a useful, concrete and tangible result.

Claims 1-12 and 34-42 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter because the claimed invention is directed to a judicial exception and is not directed to a practical application of such judicial exception (though the claims produce what is considered a useful and concrete result, the claims do not require any physical transformation and the invention does not produce a tangible result because there is no physical element.

MPEP SECTION 2106 (IV)(C)(2)(b)(2) titled “TANGIBLE RESULT” reads as follows:

...the tangible requirement does require that the claim must recite more than a 35 U.S.C. 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

and MPEP SECTION 2106 (II)(C) reads as follows:

As a general matter, the grammar and intended meaning of terms used in a claim will dictate whether the language limits the claim scope. Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim:

- (A) statements of intended use or field of use,
- (B) “adapted to” or “adapted for” clauses,
- (C) “wherein” clauses, or
- (D) “whereby” clauses.

For example, the method of independent claim 1 is directed to the actions of “determining” and “performing deblocking filtering” which is free from any “real-world result” as there may be no “real-world” application.

In order to for the claimed product to produce a “useful, concrete and tangible” result, recitation of one or more of the following elements is suggested:

- The manipulation of data that represents a physical object or activity transformed from outside the computer.
- A physical transformations outside the computer, for example in the form of pre or post computer processing activity.

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- A direct recitation of a practical application;

Applicant is also advised to provide a written explanation of how and why the claimed invention (either as currently recited or as amended) produces a useful, concrete and tangible result.

7. Claims 13-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The means-plus-function language is supported by software/program enablement which is non-statutory as shown in para. 0054 of the specification as “the embodiments may be implemented by hardware, software, firmware, middleware, microcode, or any combination thereof. When implemented in software, firmware, middleware or microcode, the elements of the embodiment are the program code or code segments to perform the necessary tasks may be stored in a machine readable medium (not shown). A code segment may represent a procedure, a function, a subprogram, a program, a routine, a subroutine, a module, a software package, a class, or any combination of instructions, data structures, or program statements...”

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 1, 13, 15, 31-32, 34, and 38-39** are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (US 6,240,135 B1).

10. Regarding **claim 1**, Kim discloses a method for processing images compressed using block based compression, comprising:

determining whether two blocks are neighboring blocks (interpretation 1: the 8 x 8 blocks in fig. 2 must have been determined to be neighboring to continue the fig. 4 algorithm; interpretation 2: the 1 x 1 blocks (pixels) in fig. 2 must have been determined to be neighboring to continue the fig. 4 algorithm);

determining whether the two neighboring blocks are both subdivided (interpretation 1: the 8 x 8 blocks in fig. 2 must have been determined to not be subdivided to continue the fig. 4 deblocking algorithm; interpretation 2: the 1 x 1 blocks (pixels) in fig. 2 must have been determined to not be subdivided to continue the fig. 4 deblocking algorithm (the algorithm has already determined that pixels cannot be sub-divided)), if it is determined that the two blocks are neighboring blocks; and

performing deblocking filtering (fig. 4, elements 411S, 412S) on one or more edge pixels ("S_o" pixels in fig. 2) of the two neighboring blocks, after determining that both of the two neighboring blocks are not subdivided.

11. Regarding **claim 3**, Kim discloses the method of claim 1, wherein determining whether two neighboring blocks are both subdivided comprises:

obtaining a block size assignment values (interpretation 1: the block size assignment information is 8 x 8 already known by the algorithm; interpretation 2: the block size assignment information is 1 x 1 already known by the algorithm); and

using the block size assignment value to determine whether the two neighboring values are subdivided (the algorithm “uses” the block size assignment value to determine whether the two neighboring values are subdivided).

12. Regarding **claim 13**, claim 1 recites identical features as in claim 13. Thus, references/arguments equivalent to those presented for claim 1 are equally applicable to claim 13. The means-plus-function language is anticipated by the computer needed to perform FIG. 4.

13. Regarding **claim 15**, claim 3 recites identical features as in claim 15. Thus, references/arguments equivalent to those presented for claim 3 are equally applicable to claim 15. The means-plus-function language is anticipated by the computer needed to perform FIG. 4.

14. Regarding **claim 31**, claim 1 recites identical features as in claim 31. Thus, references/arguments equivalent to those presented for claim 1 are equally applicable to claim 31.

15. Regarding **claim 32**, claim 3 recites identical features as in claim 32. Thus, references/arguments equivalent to those presented for claim 3 are equally applicable to claim 32.

16. Regarding **claim 34**, claim 1 recites identical features as in claim 34. Thus, references/arguments equivalent to those presented for claim 1 are equally applicable to claim 34.

17. Regarding **claim 38**, claim 3 recites identical features as in claim 38. Thus, references/arguments equivalent to those presented for claim 3 are equally applicable to claim 38.

18. Regarding **claim 39**, Kim discloses the method of claim 34, further comprising:

when a first block (8 x 8 pixel block in fig. 2) of pixels of the two neighboring blocks of pixels is subdivided (the first block is subdivided in 8 x 8 single pixels), selecting two neighboring sub-blocks of pixels (e.g. V_4 and V_6);

determining whether the two neighboring sub-blocks of pixels are both subdivided (the algorithm determines that the pixels are 1 x 1, and are thus not subdivided); and

performing deblocking filtering (fig. 4, elements 411S, 412S) on one or more edge pixels of the two neighboring sub-blocks of pixels, when it is determined that both of the two neighboring sub-blocks of pixels are not subdivided.

19. **Claims 2, 14, 33, 35 and 40** is rejected under 35 U.S.C. 102(b) as being anticipated by Kim (US 6,240,135 B1) in view of Thyagarajan et al. (US 6,529,634 B1).

20. Regarding **claim 2**, while Kim discloses the apparatus of claim 1, Kim does not teach wherein determining whether two neighboring blocks are both subdivided comprises: obtaining variance values of each of the two neighboring blocks; comparing the variance values to a first threshold; and determining whether the two neighboring blocks are both subdivided based upon the comparison of the variance values to the first threshold.

Thyagarajan discloses a contrast sensitive variance based adaptive block size DCT image compression that teaches wherein determining whether two neighboring blocks are both subdivided comprises:

obtaining variance values of each of the two neighboring blocks (*e.g.* blocks P₃₂ and P₃₃ of fig. 3b are neighboring);

comparing the variance values (“V4ij” in element 226 of fig. 2) to a first threshold (“T4” in element 226 of fig. 2); and

determining whether the two neighboring blocks are both subdivided based upon the comparison of the variance values to the first threshold (fig. 2, elements 224, 226, 228, 230

determines that both blocks are both subdivided based upon the PQR data which was based upon the comparison of the variance values to the first threshold).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the apparatus of Kim to determine whether two neighboring blocks are divided based upon variance values of each block as taught by Thyagarajan as “[v]ariance based block size assignment offers several advantages. Because the Discrete Cosine Transform is performed after block sizes are determined, efficient computation is achieved. The computationally intensive transform need only be performed on the selected blocks. In addition, the block selection process is efficient, as the variance of pixel values is mathematically simple to calculate. Still another advantage of variance based block size assignment is that it is perceptually based. Pixel variance is a measure of the activity in a block, and provides indication of the presence of edges, textures, etc. It tends to capture the details of a block much better than measures such as the average of pixel values. Thus, the variance based scheme of the present invention assigns smaller blocks to regions with more edges and larger blocks to the flatter regions. As a result, outstanding quality may be achieved in the reconstructed images.”, Thyagarajan, 9-25.

21. Regarding **claim 14**, claim 2 recites identical features as in claim 14. Thus, references/arguments equivalent to those presented for claim 2 are equally applicable to claim 14.

22. Regarding **claim 33**, while Kim discloses the apparatus of claim 31, wherein the processor determines whether two neighboring blocks are divided (refer to references/arguments of claim 1); however, Kim does not teach wherein the processor determines whether two neighboring blocks are divided based upon variance values of each block.

Thyagarajan discloses a contrast sensitive variance based adaptive block size DCT image compression that teaches wherein a processor (“compact hardware” in 3:47; fig. 1, elements 120, 122, 124)) determines whether two neighboring blocks (*e.g.* blocks P_{32} and P_{33} of fig. 3b are neighboring) are divided based upon variance values of each block (fig. 2, elements 224, 226, 228, 230).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the processor of Kim to determines whether two neighboring blocks are divided based upon variance values of each block as taught by Thyagarajan as “[v]ariance based block size assignment offers several advantages. Because the Discrete Cosine Transform is performed after block sizes are determined, efficient computation is achieved. The computationally intensive transform need only be performed on the selected blocks. In addition, the block selection process is efficient, as the variance of pixel values is mathematically simple to calculate. Still another advantage of variance based block size assignment is that it is perceptually based. Pixel variance is a measure of the activity in a block, and provides indication of the presence of edges, textures, etc. It tends to capture the details of a block much better than measures such as the average of pixel values. Thus, the variance based scheme of the present invention assigns smaller blocks to regions with more edges and larger blocks to the flatter regions. As a result, outstanding quality may be achieved in the reconstructed images.”, Thyagarajan, 9-25.

23. Regarding **claim 35**, claim 2 recites identical features as in claim 35. Thus, references/arguments equivalent to those presented for claim 2 are equally applicable to claim 35.

24. Regarding **claim 40**, claim 2 recites identical features as in claim 40. Thus, references/arguments equivalent to those presented for claim 2 are equally applicable to claim 40.

25. **Claims 41-42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US 6,240,135 B1) in view of Tan et al. (US 6,188,799 B1).

Regarding **claim 41**, while Kim disclose the method of claim 34, Kim does not teach obtaining one or more difference values of one or more edge pixels of the two neighboring blocks of pixels; determining a number of the one-or more difference values that exceed a threshold value; and selecting a deblocking filter based on the number.

Tan discloses a method for removing noise in still and moving pictures (FIG. 3, element 7) that teaches

obtaining one or more difference values (“deviation c1 and c2” in element 55, FIG. 10 and difference value in element 54, FIG. 6 that involves difference values between one or more corresponding edge pixels) of one or more edge pixels (FIG. 7) of the two neighboring blocks of pixels (“Group 1” and “Group 2” in FIG. 7);

determining a number of the one-or more difference values that exceed a threshold value (FIG. 6, elements 57, 59) ; and

selecting a deblocking filter based on the number (FIG. 6, elements 58, 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of Kim to include obtaining one or more difference values of one or more edge pixels of the two neighboring blocks of pixels; determining a number of the one-or more difference values that exceed a threshold value; and selecting a deblocking filter based on the number as taught by Tan because “...the novelty of this invention is the use of this particular deblocking filter in the prediction loop to prevent the propagation of blocky artifacts.”, Tan, Col. 2, lines 33 – 34.

Regarding **claim 42**, while Kim in view and Tan disclose the method of claim 42, Kim in view and Tan do not teach wherein selecting the deblocking filter comprises: selecting a first deblocking filter when the number is equal to 1; and selecting a second deblocking filter when the number is greater than 1.

Tan discloses a method for removing noise in still and moving pictures (FIG. 3, element 7) that teaches selecting the deblocking filter comprises:

selecting a first deblocking filter (FIG. 6, element 58) when the number is equal to 1; and
selecting a second deblocking filter (FIG. 6, element 60) when the number is greater than 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of Kim in view and Tan to include wherein selecting the deblocking filter comprises: selecting a first deblocking filter when the number is equal to 1; and selecting a second deblocking filter when the number is greater than 1 as taught by Tan because "...the novelty of this invention is the use of this particular deblocking filter in the prediction loop to prevent the propagation of blocky artifacts.", Tan, Col. 2, lines 33 – 34.

26. **Claim 36** is rejected under 35 U.S.C. 103(a) as being unpatentable over (US 6,240,135 B1) in view of Tan et al. (US 6,188,799 B1) and Varma et al. (US 2003/0235250 A1).

Regarding **claim 36**, while Kim disclose the method of claim 34, Kim does not teach determining one or more difference values between one or more corresponding edge pixels of the two neighboring blocks of pixels; when one of the one or more difference values exceeds a threshold value, filtering the edge pixels using an averaging filter; and when two or more of the one or more difference values exceeds the threshold value, filtering the edge pixels using a Gaussian filter.

Tan discloses a method for removing noise in still and moving pictures (FIG. 3, element 7) that teaches

determining one or more difference values (“deviation c1 and c2” in element 55, FIG. 10 and difference value in element 54, FIG. 6 that involves difference values between one or more corresponding edge pixels) between one or more corresponding edge pixels (FIG. 7) of the two neighboring blocks of pixels (“Group 1” and “Group 2” in FIG. 7);

when one of the one or more difference values exceeds a threshold value (FIG. 6, element 57), filtering the edge pixels (FIG. 6, element 58) using an averaging filter (FIG. 9); and

when two or more of the one or more difference values exceeds the threshold value (FIG. 6, elements 57, 59), filtering the edge pixels (FIG. 6, element 60) using a filter (FIG. 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of Kim to include determining one or more difference values between one or more corresponding edge pixels of the two neighboring blocks of pixels; when one of the one or more difference values exceeds a threshold value, filtering the edge pixels using an averaging filter; and when two or more of the one or more difference values exceeds the threshold value, filtering the edge pixels using a filter as taught by Tan because “...the novelty of this invention is the use of this particular deblocking filter in the prediction loop to prevent the propagation of blocky artifacts.”, Tan, Col. 2, lines 33 – 34.

Varma teaches video deblocking that uses a Gaussian filter (paragraph [0005]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the filter of Kim in view of Tan to include a Gaussian filter as taught by Varma as “...these

actions may be accomplished using a spatio-temporally varying filter.”, Varma, paragraph [0005] in reference to the objectives listed in paragraph [0005].

Allowable Subject Matter

27. **Claims 4-12, 16-21, and 37** would be allowable if rewritten to overcome the rejections under 35 U.S.C. 101, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

28. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4-12, 16-21, and 37, the prior art teaches determining whether two blocks are neighboring blocks; determining whether the two neighboring blocks are both subdivided, if it is determined that the two blocks are neighboring blocks; and performing deblocking filtering on one or more edge pixels of the two neighboring blocks, after determining that both of the two neighboring blocks are not subdivided, as well as further depth into threshold comparisons to variance values, block size assignment values, and difference values, but the prior art does not teach (i) determining whether one of the two neighboring blocks is subdivided, if both of the two neighboring blocks are not subdivided; using a first deblocking filter on one or more edge pixels of the two neighboring blocks if one of the two neighboring blocks is subdivided; and using a second deblocking filter on one or more edge pixels of the two neighboring blocks if neither of the two neighboring blocks is subdivided; and (ii) wherein the Gaussian filter comprises an N-point Gaussian filter, wherein N indicates two times a number of the one or more difference values that exceed the threshold value.

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5107345 A; US 5452104 A; US 5748792 A; US 5903669 A; US 5982441 A; US 6031937 A; US 6526174 B1; US 6529634 B1; US 20030156648 A1; US 20030202608 A1.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Rashid whose telephone number is (571) 270-1578. The examiner can normally be reached Monday - Friday 8:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624

/Brian P. Werner/
Supervisory Patent Examiner, Art Unit 2624

David P Rashid
Examiner
Art Unit 2624